

### **Remarks**

The Applicants note with appreciation the allowance of Claims 138 and 139. Claim 138 has been amended to correct a minor, obvious error.

Claim 123 stands rejected under 35 U.S.C. §112, second paragraph as being indefinite. The Applicants note with appreciation the Examiner's helpful comments concerning the apparent inconsistency between Claims 123 and 121. Claim 121 has been amended to remove the inconsistency. Claim 121 recites that the paste applicator has a nozzle with 150 to 2000 outlet holes for discharging a phosphor paste for emitting light of one color selected from the group consisting of red, green and blue to form phosphor layers. Then, Claim 121 has been amended to recite the step of applying the phosphor paste discharged from the outlet holes into all of the spaces to be coated with the phosphor paste for emitting light of the selected color between the barrier ribs to form the phosphor layers. The Applicants respectfully submit that this amendment to Claim 121 removes any inconsistency with Claim 123. Withdrawal of the rejection of Claim 123 is respectfully requested.

Claims 121-137, 140-153 and 158-164 stand rejected under 35 U.S.C. §112, first paragraph for failing to comply with the written description requirement. Again, the Applicants note the Examiner's helpful comments concerning specific items and specific claims. Each of the items is addressed below.

Claims 121 (as mentioned above) and 141 have been amended. Claim 121 has now been amended to recite the step of applying the phosphor paste discharged from the outlet holes into all of the spaces to be coated with the phosphor paste for emitting light of the selected color between the barrier ribs to form the phosphor layers. This means that all of the spaces for a selected color are coated with paste of the selected color. Claim 141 has been similarly amended. Withdrawal of the rejection of Claims 121, 141 and claims associated therewith or dependent

therefrom, is respectfully requested. Claim 147 has been amended to correct a minor, obvious error.

With respect to Claims 134-137, 152 and 162 and the “two passes,” all of those claims have been cancelled without prejudice and without disclaimer of the subject matter therein to facilitate early allowance. The Applicants specifically reserve the right to file continuation and/or divisional applications directed to that subject matter.

Claim 153 has been amended to recite discharging the first phosphor paste from the first manifold to all of the spaces to be coated with the first phosphor paste for emitting red light, to discharge the second phosphor paste from the second manifold to all of the spaces to be coated with the second phosphor paste for emitting green light, and to discharge the third phosphor paste from the third manifold to all of the spaces to be coated with the third phosphor paste for emitting blue light. The Applicants respectfully submit that this clarifies that the three different phosphor pastes are not applied over one another. Withdrawal of the rejection as it applies to Claim 153 is respectfully requested.

With respect to Claims 158-160, the Applicants respectfully submit that there is no requirement for the Specification to provide 600 outlet holes as “an end point of a range.” This was settled long ago in the *Wertheim* and *Ralston Purina* cases (199 U.S.P.Q. 90 (CCPA 1976) and 227 U.S.P.Q. 177 (Fed. Cir. 1985)). The Applicants have nonetheless amended Claims 158-160 to replace 600 with 640. Support may be found in the Applicants’ U.S. Specification at, for example, Page 71, Line 10 and in the Applicants’ Japanese priority application on Page 27, Lines 18-19 of the English translation. These are merely representative locations. Withdrawal of the rejection of Claims 158-160 is respectfully requested.

The Applicants note the Examiner’s comments concerning the language reciting applying the phosphor paste into the spaces between the barrier ribs across the entire base substrate. The

Applicants assume that this portion of the rejection refers to Claims 161-164. In any event, the Applicants believe that the claim language is fully supported. Reasons are set forth below.

The Applicants confirm their earlier reference to the paragraph bridging Pages 19 and 20. The Applicants agree that the paragraph does support fully coating the substrate with a glass paste to form barrier ribs and that certain portions of the glass paste are removed to form a certain pattern.

The paragraph does not explicitly state how much of the glass paste is removed. However, it does state that the substrate is fully coated with a glass paste and that certain portions of the glass paste are removed to form a desired pattern. It does not state that additional portions of the glass paste are removed to form anything other than a selected pattern of the barrier ribs. The Applicants therefore respectfully submit that this constitutes the support necessary for the claim language.

Said differently, the paragraph supports fully coating the glass paste. It also fully supports removing portions of the glass paste to form a certain pattern. In the absence of any affirmative language stating that other portions of the glass paste are removed, this means that all other portions of the glass paste remain present and form a certain pattern. Thus, having fully applied the glass paste and having specified what portions are removed, it cannot be speculated as to whether additional portions have been removed. The Applicants therefore respectfully submit that the claim language is fully supported.

To the extent that the Applicants referred to several millimeters or centimeters not containing barrier ribs in the prior Response, this is no admission that the entire substrate may not be fully coated and contain barrier ribs. In other words, the Applicants have disclosed in one location full coating of the entire substrate with removal of glass paste only to the extent of forming ribs. That portion of the Specification spanning Pages 19 and 20 does not remove any

glass paste from the fully coated substrate other than to form a selected pattern.

That does not preclude other portions of the Specification from disclosing other things. For example, the Applicants invite the Examiner's attention to Example 1 of their Specification on Page 68. Example 1 discloses that the lateral length of the soda glass substrate is 440 mm (at Page 68, Line 2) and the range forming the barrier ribs is 422 mm which is derived from the number of the barrier ribs of 1921 (at Page 68, Line 15), the pitch of the barrier ribs of 220  $\mu\text{m}$  (Page 68, Line 16), and the width of the barrier rib of 30  $\mu\text{m}$  (Page 68, Line 15) with the equation:  $(1921 - 1) \times 220 + 30 = 422 \text{ mm}$ . The lateral length of the base substrate is 440 mm and the range formed the barrier ribs is 422 mm.

Example 1 is what was meant in a different location in the Applicants' Specification as to an instance where a number of millimeters of the substrate was left without barrier ribs. In that case, there were a total of 18 mm out of 440 mm that did not have barrier ribs. That would leave 9 mm on each side. In that case, the phosphor paste is applied between the barrier ribs positioned across substantially the entire base substrate.

The point behind the disclosure in the Specification in the paragraph bridging Pages 19 and 20 on the one hand and Example 1 on the other hand, is that the application of paste is applied across the substrate in one movement. Whether that be one movement of all three of the colors or one movement of one color. The Applicants respectfully submit that the original language is fully supported and have amended all of Claims 161-164 to recite that the phosphor paste is applied between the barrier ribs position across substantially the entire base substrate. The Applicants respectfully submit that such language is fully supported not only by the paragraph bridging Pages 19 and 20 on the one hand, but also Example 1, on the other hand. Withdrawal of the §112 rejection is respectfully requested.

Claims 121-123, 125-127, 129-134, 137, 141, 143, 147-154, 158-161 and 164 stand

rejected under 35 U.S.C. §103 over Nanto. The Applicants respectfully submit that the rejection is now moot as it applies to Claims 134, 137 and 152 in view of their cancellation. The Applicants respectfully submit that Nanto is inapplicable to the remaining claims. Detailed reasons are set forth below.

The Applicants begin by reference to Claims 158-160. The Applicants respectfully submit that Nanto is not prior art to those claims. The Applicants' last Response dated November 30, 2006 and received at the PTO on December 5, 2006 contain a set of charts that provide line by line support for the language in the Applicants' U.S. application, and the Applicants' JP '713 priority document. As noted above, the Applicants amended Claims 158-160 to change the number of outlet holes from 600 to 640. However, the Applicants have also already established that there is support for that change in not only their U.S. application but their JP '713 priority application. Therefore, the Applicants earlier assertion that Nanto is not prior art is as valid as ever. The Applicants invite the Examiner's attention to the prior submitted charts for Claims 158-160 so that the Examiner can see that the claim language is fully supported by both U.S. application and the Applicants' JP '713 priority application so that Nanto can be removed as prior art and Claims 158-160 can be promptly allowed.

Before proceeding to a further discussion of individual claims, the Applicants first note the Examiner's helpful comments in the "Response to Arguments" section with respect to the Applicants' earlier Declaration and Examples 4, 8 and 9. Claims 121-137 and 140-153 are noted in particular. The Applicants respectfully submit that the comments are now moot with respect to Claims 134-137. However, the Applicants respectfully submit that Claims 121-133 and Claims 140-151 and 153 contain language which is in conformance with the showing of unexpected results for applying phosphor paste to substantially all the spaces between the barrier ribs.

In that regard, the Applicants invite the Examiner's attention first to Claim 121 which now recites applying the phosphor paste discharged from the outlet holes into all of the spaces to be coated with the phosphor paste for emitting light to the selected color between the barrier ribs to form the phosphor layers therein during the one time relative movement. What this means is that the operator can select one color of red, green or blue and then apply the selected red, green or blue color to all of the spaces that will be receiving that selected color in a single pass. Thus, all of the spaces that are designated to receive red paste will receive all of the red paste in a single pass. The same is true for each of blue and green.

In this case, that is what is exemplified in Example 4 wherein a "one-color" phosphor paste was completed by one time of paste applicator movement.

The Applicants respectfully submit that Claim 141 contains similar language wherein a paste applicator comprises a nozzle having a manifold provided therein to store a phosphor paste for emitting light of one color selected from the group consisting of red, green and blue to form the phosphor layers and a plurality of outlet holes to discharge the phosphor paste from the manifold to all of the spaces to be coated with the phosphor paste for emitting light of the selected color between the barrier ribs of the base substrate. The Applicants respectfully submit that this claim is also represented by Example 4 wherein an apparatus is provided that can coat with one-color phosphor paste in a one time paste applicator movement. The Applicants therefore respectfully submit that Claim 141 is commensurate in scope with the showing of unexpected results.

Referring next to independent Claim 153, the Applicants note that Claim 153 refers to apparatus having a first nozzle for red paste, a second nozzle for green paste and a third nozzle for blue paste. Each nozzle has a manifold that discharges the respective phosphor pastes to all of the holes to be coated with the respective phosphor paste that emit that respective color light

between the barrier ribs. Then, Claim 153 specifies a moving device to move the table and the paste applicator relative to each other in a one time relative movement. That means that the first nozzle applies a red paste to all of the spaces designated to receive red paste, the second nozzle applies the green paste to all of the spaces designated to receive green paste and the third nozzle applies blue paste to all of the spaces designated to receive blue paste --- all in a single pass. The Applicants respectfully submit that Example 9 is an example which is performed in accordance with Claim 153 wherein there is a simultaneous discharge of red, blue and green phosphor paste, all done in a single pass.

Independent Claim 154 recites a paste applicator having outlet holes for discharging a phosphor paste for emitting light of one color selected from the group consisting of red, green and blue. That paste applicator is moved relative to the substrate in a one time relative move of the outlet holes so that the phosphor paste is discharged from the outlet holes into all of the spaces to be coated with the phosphor paste for emitting light of the selected color. The Applicants respectfully submit that Claim 154 is exemplified in Example 1 wherein, for example, the red paste is applied to all of the spaces designated to receive red paste in a single pass.

The Applicants have already addressed the fact that Nanto is not prior art with respect to Claims 158-160. Withdrawal of the rejection of Nanto is respectfully requested.

With respect to Claim 161, it recites a paste applicator having outlet holes for discharging a phosphor paste for emitting light of one color selected from the group consisting of red, green and blue. Then, Claim 161 recites the step of applying the phosphor paste discharged from the outlet holes into the spaces to be coated with the phosphor paste for emitting light of the selected color between the barrier ribs extending across substantially the entire base substrate to form the phosphor layers therein in a single pass. The Applicants respectfully submit that this claim is also represented in Example 1 wherein a designated color is applied to the spaces between the

barrier ribs that are designated to receive that color paste in a single pass. That means that multiple passes are not needed for a designated or selected color.

Finally, with respect to Claim 164, the Applicants note that it too recites a paste applicator having a manifold that stores one color selected from the group consisting of red, green and blue and a plurality of outlet holes to discharge the phosphor paste from the manifold to the spaces to be coated with the phosphor paste for emitting light of the selected color between the barrier ribs positioned across substantially the entire base substrate. There is also a moving device that moves the table on the paste applicator relative to each other in a single pass. The Applicants respectfully submit that the subject matter of Claim 164 is also demonstrated in Example 1.

Inasmuch as all of the above-mentioned claims (with the exception of Claims 158-160) have been shown to be commensurate in scope with the examples mentioned in the Official Action such that those claims reflect the unexpected results mentioned in the Applicants' earlier Declaration, withdrawal of the rejection is respectfully requested.

Claims 124 and 142 stand rejected under 35 U.S.C. §103 over the hypothetical combination of Ravi-Chandar with Nanto. The Applicants respectfully submit that hypothetically combining Ravi-Chandar does nothing to cure the deficiency set forth above with respect to Nanto. Withdrawal of the rejection is respectfully requested.

Claim 131 stands rejected under 35 U.S.C. §103 over the hypothetical combination of Osaka with Nanto. The Applicants respectfully submit that hypothetically combining Osaka with Nanto fails to cure the deficiency set forth above with respect to Nanto. Withdrawal of the rejection is respectfully requested.

Claims 134-137, 152-153, 156 and 162-163 stand rejected over the hypothetical combination of Koike with Nanto. The Applicants respectfully submit that the rejection is moot



with respect to cancelled Claims 134-137, 152 and 162. With respect to the remaining claims, the Applicants respectfully submit that the hypothetical combination fails to teach or suggest the subject matter of those rejected claims.

For example, in the case of Claim 153, that structure recites first, second and third nozzles that discharge paste of the three respective colors to all of the spaces to be coated with the phosphor paste for emitting the selected color in a one time movement. As noted above with respect to other claims, this language is represented in Example 9 of the Applicants' Specification wherein all three colors are discharged simultaneously in a single pass. This also falls within the unexpected results mentioned above and is neither taught or suggested by Nanto and Koike, whether taken individually or collectively.

Claim 156 is illustrated in Example 1 wherein the three respective phosphor pastes are selected and then the spaces to be coated with the respective phosphor paste for emitting light of the selected color are filled in a one time relative movement. Thus, the spaces to be coated with a particular color paste are coated in a one time relative movement. There is no need to have multiple passes to fill the spaces for a selected color. Those spaces are filled with the selected color in a one time relative movement. Again, this is illustrated in Example 1 of the Applicants' Specification. The Applicants' therefore respectfully submit that Claim 156 also falls within the unexpected results that have previously been demonstrated. As a consequence, hypothetically combining Koike with Nanto fails to teach or suggest that subject matter as well.

The subject matter of Claim 163 is represented in Example 9 wherein there are three nozzles, each nozzle containing a separate color and the selected phosphor pastes are applied to the respective spaces to be coated with the selected phosphor paste between the barrier ribs positioned across substantially the entire base substrate in a single pass. This means that the spaces designated to receive red paste receive the red paste in a single pass. The green and blue

designated spaces also receive the green and blue paste in a single pass. This means that substantially the entire base substrate can receive the red, green and blue pastes in a single pass without the need for further passes. Inasmuch as the Applicants' have demonstrated that Claim 163 is commensurate in scope with Example 9, the Applicants respectfully submit that the hypothetical combination of Koike with Nanto is inapplicable. The Applicants therefore respectfully request withdrawal of the rejection.

Claims 140 and 155 stand rejected under 35 U.S.C. §103 over the combination of Kohli with Nanto. The Applicants respectfully submit that hypothetically combining Kohli with Nanto fails to cure the deficiency set forth above with respect to Nanto. Withdrawal of the rejection is respectfully requested.

Claim 157 stands rejected under 35 U.S.C. §103 over the hypothetical combination of Kohli and/or Koike with Nanto. The Applicants respectfully submit that hypothetically combining Kohli and/or Koike with Nanto fails to cure the deficiency set forth above with respect to Nanto. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



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